REMARKS

Reconsideration of the application is requested.

Claims 1, 2, 6-8 and 12 remain in the application. Claims 1, 2, 6-8 and 12 are subject to examination. Claims 1 and 7 have been amended. Claims 3-5 and 9-11 have been canceled to facilitate prosecution of the instant application.

In item 3 on pages 2-4 of the above-identified Office Action, claims 1 and 7 have been rejected as being obvious over U.S. Patent No. 5,214,675 to Mueller et al. (hereinafter Mueller) in view of U.S. Patent No. 5,448,560 to Wood et al. (hereinafter Wood) under 35 U.S.C. § 103.

Mueller discloses a method for calculating two channel parameters, channel gain and noise variance. These parameters are supplied to the decoder to recreate more accurately an information signal.

For calculating the channel parameters, a calculating scheme is used which is based on the variance of an error signal 166, see column 10, lines 31 to 37. The error signal 166 is generated by a summing element 162, which processes a detected signal 158 and an undetected signal 142, see Fig. 2. For calculating the channel gain and the noise variance, the

variance of the error signal is essential to solving the equations in line 54 and 66 on column 10 (please note, that the channel gain in line 66 for calculating the noise variance depends on the variance of the error signal).

With respect to claims 1 and 7 of the instant application, a second set of channel parameters (in addition to the first set of channel parameters related to equalization) is estimated for utilization in the decoding process. The channel parameters include the variance of radio channel noise and the damping factor of the radio channel, with these two channel parameters being the same as the two channel parameters which are calculated in Mueller (compare the definition in equation 1 on page 18 with the definition in column 9, line 66, to column 10, line 5, in Mueller).

In contrast to Mueller, in the instant application the channel parameter estimation is done by a different calculation scheme, the so-called method of moments (see page 18, line 10, to page 21, line 3). More specifically, it is noted that in equations 7.1 and 7.2 both channel parameters are calculated as a function of statistical moments of the equalized data signal.

According to the method of moments of the invention of the instant application, the channel parameters are calculated in dependence on statistical moments of the equalized data signal an (see equation 7.1 on page 20 and equation 7.2 on page 21). An additional error signal does not have to be calculated. In contrast thereto, in Mueller an additional error signal 166 is calculated as the difference between the detected signal 158 and the undetected signal 142, which requires the summing element 162 and the symbol detector 154. Additionally, as outlined in the description of the application (page 5, line 26, to page 6, line 2), this method for estimating the channel parameters outperforms other methods as e.g. MAP-estimators. Thus, the proposed method according to claim 1 and the device of claim 7 leads in comparison to other schemes to a reduction in hardware implementation effort and calculation effort.

In the Office action the Examiner maintains that Wood teaches the method of determining a damping factor according to the method of moments.

However, the damping factor that is calculated in Wood has nothing in common with the damping factor of the radio channel as it is calculated according to claim 1 or 7 of the instant application. The damping factor in Wood indicates

whether a closed control loop oscillates or not (see column 13, lines 18 to 24). This kind of damping factor can be measured by determining the magnitude of the first maxima and minima of the error signal in a closed control loop (see column 1, lines 30 to 33). In contrast thereto, the damping factor of the radio channel - as given in claim 1 or 7 - is the gain of a radio channel (see equation 1 on page 18), with the gain being smaller than 1.

In addition, the specific method of moments that is employed in Wood has nothing in common with the method of moments as is used according to claims 1 and 7 of the instant application. In Wood the method of moments is employed for calculating a Laplace transform of a function y(t) (see column 6, lines 15 to 57). The moments m_0, m_1 and m_2 are defined as integral expressions of the function y(t) (see column 6, lines 40 to 50). A statistical distribution of y(t) is not considered. In contrast thereto, the method of moments according to claims 1 or 7 of the instant application is based on statistical moments as defined in equations 5 and 6. These statistical moments are completely different to those moments which are used in Wood and therefore there is no analogous art in Wood that would be helpful.

Thus, Wood does not give any hint to calculate a damping

factor in the inventive meaning using a method of (statistical) moments, with the damping factor being calculated merely in dependence on statistical moments. Analogously, Wood does not give any hint to calculate the noise variance in the same manner.

Therefore, the subject matter of amended claims 1 and 7 are believed not obvious to a person skilled in the art with the knowledge of Mueller in combination with Wood.

In item 4 on pages 4-5 of the above-identified Office Action, claims 2-5 and 8-11 have been rejected as being obvious over U.S. Patent No. 5,214,675 to Mueller et al. (hereinafter Mueller) in view of U.S. Patent No. 5,448,560 to Wood et al. (hereinafter Wood) and further in view of Raphaeli et al. under 35 U.S.C. § 103.

Claims 4-5 and 9-11 have been canceled. Claims 2 and 8 depend on amended claims 1 and 7 which are believed to be allowable. Therefore claims 2 and 8 are also believed to be allowable.

In item 5 on pages 5-6 of the above-identified Office Action, claims 6 and 12 have been rejected as being obvious over U.S. Patent No. 5,214,675 to Mueller et al. (hereinafter Mueller)

in view of U.S. Patent No. 5,448,560 to Wood et al. (hereinafter Wood) and further in view of U.S. Patent No. 5,970,060 to Baier et al. under 35 U.S.C. § 103.

Claims 6 and 12 depend on amended claims 1 and 7 which are believed to be allowable. Therefore claims 6 and 12 are also believed to be allowable.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1 or 7. Claims 1 and 7 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 1 or claim 7.

In view of the foregoing, reconsideration and allowance of claims 1, 2, 6, 7, 8 and 12 are solicited.

If an extension of time is required, petition for extension is herewith made. Any extension fee associated therewith should be charged to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

For Applicants

RALPH E. LOCHER
REG. NO. 41,947

REL:cgm

December 13, 2004

Lerner and Greenberg, P.A.
P.O. Box 2480
Hollywood, Florida 33022-2480
Tel.: (954) 925-1100
Fax: (954) 925-1101